



Docket No.: 1349.1330

DECLARATION UNDER 35 C.F.R. 1.131(a)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Yong-hyun LEE et al

Serial No. 10/715,402

Group Art Unit: 3651

Confirmation No. 5308

Filed: November 19, 2003

Examiner: Leslie Nicholson, III

For: POWER TRANSMITTING APPARATUS, POWER SWITCHING APPARATUS, AND
DRIVING APPARATUS OF MULTI-FUNCTION MACHINE USING THE SAME

DECLARATION UNDER RULE 131(A)

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

We, Yong-hyun LEE, Dong-gyoo LEE, the Applicants in the above-identified patent application declare as follows:

1. On September 24, 2002, we signed an invention disclosure form disclosing the invention recited in the above-identified patent application. A copy of the invention disclosure form, along with a statement that the translation of the invention disclosure form is accurate, is attached hereto.

2. On October 17, 2002, this invention disclosure form was forwarded to the Korean Patent firm of Nawoo Patent & Law Firm, to be prepared and filed as a U.S. Patent Application. A date stamp of receipt is shown on the invention disclosure form attached hereto.

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Docket No.: 1349,1330

The Declarants further state that the above statements were made in the knowledge that willful false statements and the like are punishable by fine and/or imprisonment, or both under Section 1001 of Title 18 of the United States Code, and that any such willful false statement may jeopardize the validity of this application or any patent resulting therefrom.

By: Y.H. Lee Date: 2006. 5. 30
Yong-hyun LEE

By: D.G. Lee Date: 2006. 5. 30
Dong-gyoo LEE



국내출원 상세내역

Family NO. CG-200209-067-1

■ 국내원문보기

발명명칭 프린터 복합기의 NO SCAN MOTOR 구동장치

진행상태

위임

■ 발명자(국내) Inventor

NO SCAN MOTOR DRIVING DEVICE OF MULTI-FUNCTIONAL PRINTER

성명	영문	한문	주민번호	전화번호	H.P.
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			SEP. 18. 2002		

■ 직무발명

Date of making Invention

Date of approval by Head of Dept.

작성(상신일)	2002/09/18	부서장 결재일	2002/09/24
특허부서 접수일자	2002/09/24	접수번호	CG-200209-067-1
사건구분	자체발명		

■ 선행기술조사

SEP. 24. 2002

의뢰일자	2002/09/28	회신일자	2002/10/08
조사업체	KIPRIS	조사자	

■ 발명명가

발명자	일자	2002/09/18	등급	A급
발명부서장	일자	2002/09/24	등급	A급
출원담당자	일자	2002/09/28	등급	A급
평가위원회	일자	2002/10/17	등급	A급

■ 국내결정사항

담당자 결정사항

결정일자	2002/09/28	결정내용	일반출원
권리구분	특허	심사청구(특허)	청구
기술평가(실용)	-	현출원당당자	이상협
출원인	삼성전자	-	-

위원회 결정사항

결정일자	2002/10/17	결정내용	일반출원
권리구분	특허	심사청구(특허)	청구
기술평가(실용)	-	-	-

관련번호

접수번호	출원번호	진행상태

■ 해외결정사항

Oct. 17. 2002

우선권마감일	-	-	-
결정일	2002/10/17	결정내용	(해출원)일반

변역문



Invention Disclosure Form

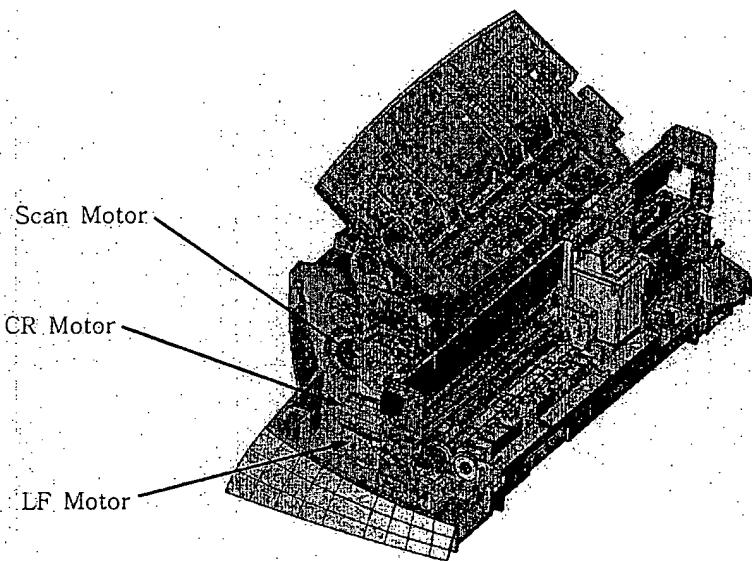
1. Title of the Invention	<p>*발명(고안)내용을 적절히 표현할 수 있는 명칭을 간단명료하게 기재함. *전문용어, 약자는 가급적 피함.</p> <p>No scan motor driving device of a multi-functional printer</p>		<p>예) 전자렌지의 도어도크장치, 더블데크 음향기기의 연속플레이 회로</p>	
2. Background of the Invention	<p>*200자 내외로 발명(고안)의 적용분야를 간결명료하게 압축하여 설명함.</p>		<p>예) 본 발명(고안)은 ..하는 영상 재생장치(넓은 Category) 에 관한 것으로, 특히, (발명 (고안)의 특징 기능) 할 수 있 도록 한 (...에 적합한) 위도신호 복호회로(좁은 category)에 관한 것이다. (고안)의 특징 기능) 할 수 있 도록 한 (...에 적합한) 위도신호 복호회로(좁은 category)에 관한 것이다.</p>	
<p>[Industrial applicable field]</p> <p>The present invention relates to a device for feeding a document to be scanned or a paper to be printed by one motor using a gear power switching device of a multi-functional printer. In detail, the present invention enables a printing document and a scanning paper to be fed using LF motor for feeding the document to be printed and the gear power switching device without a scan motor.</p> <p>When a CR motor assembly presses a lever of the left of the gear power switching device to operate it, the present device can feed the document to be scanned, and when the lever is released, the present device can feed the paper to be printed.</p> <p>Since the system of the present device employs the gear power switching device, one motor can simply function as two motors for feeding a document to be scanned and a paper to be printed, respectively.</p>				
<p>[종래 기술의 설명] *가장 최근에 공개된 발명(고안)과 관련된 기술을 요약 설명함.</p>				
1. 기술출처 (해당부분만 선택하여 기재)	(1)유사특허 또는 출원	<p>*해당특허의 출원번호(또는 등록번호), 명칭, 출원인 등을 기재하고 첨부함.</p>		<p>예) 종래..에 관한 본 발명(고안) 과 관련된..기술은..에 의해 출원된 특허출원 제90-1234호 (명칭, 출원일)에 기재 되어 있음</p>
	(2)배경문헌 또는 제품	<p>*문헌명, 해당Page, 발표년월, 발표자 등을 기재하고 첨부함. *제품모델명, 제조회사, 제조년월일 기재함.</p>		<p>예) 기술과 관련있는 종래기술은 ..에 의해 발표된 IEEE/1992년 10월, P12, 5행에 서술됨.</p>
	(3)발명(고안)과 관련된 본 발명자의 전출원	<p>*선출원 번호, 출원일(반드시 기재바람), 명칭을 기재함.</p>		<p>예) ..에 관한 기술은 본발명 (고안)자의 특허출원 제 92-4321호(명칭, 출원일)에 서술되어 있음.</p>
<p>정보가전총괄 지적자산그룹</p>				

3. Conventional Art

작성 방법: (순서대로 기입)

- ◆ 1. 종래기술도면: 관련도면을 양식없이 A4용지에 그림.(사시도, 블럭도, 회로도 등...)
- ◆ 2. 종래기술 구조: 종래기술의 구성요소들을 도면과 연관하여 간결명료하게 압축설명함.
기입 예: ○○을 달성하기 위해 종래에는 ~~하는 A, ~~하는 B, ~~하는 C, ~~하는 D로 구성된 장치를 이용하였다.
- ◆ 3. 종래기술 동작: 상기 구성장치가 어떻게 동작하는 가를 동작순서에 따라 간략하게 설명함.
- ◆ 4. 종래기술의 문제점: 상기 종래기술의 문제점을 지적하고 본 발명(고안)에서 개선하려는 내용
(발명의 배경 등 동기 등) 및 개선 효과를 설명함.
- ◆ 5. 한 Page가 넘어갈 경우 Page를 삽입하여 작성.

① Drawing of conventional art



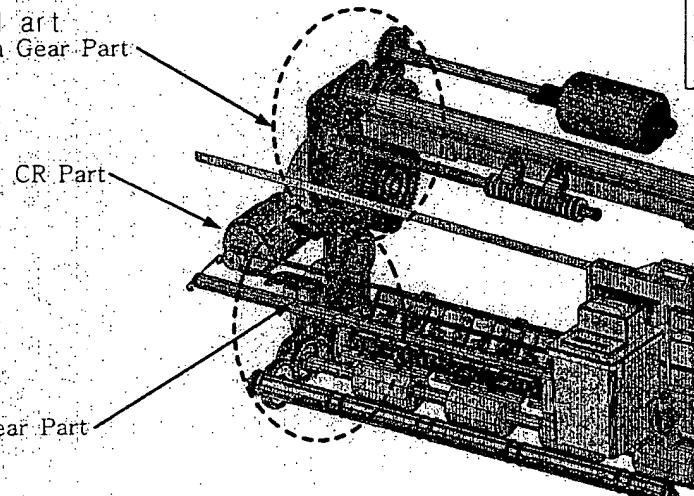
② Structure of conventional art

Scan Gear Part

CR Part

LF Gear Part

This structure employs each motor for scan part and LF part.



③ 종래기술동작

④ 종래기술의 문제점

상기 종래 기술의 문제점은 다음과 같다.

종래의 기술은 Scan Part 와 Print Part 에 각각 Step Motor 를 적용하여 MAIN BOARD 에 연결하는 HARNESS MOTOR 를 차지, 조립하는 MOTOR BRACKET, MOTOR 를 구동시키는 전용 MOTOR DRIVE IC 등으로 구조적으로 복잡하고 공간적으로 커지는 단점이 있다. 원가적인 측면에서 Low Cost 제품개발에 불리한 면이 있다.

4. Detailed Description of the Invention (Device)

작성 방법:(순서대로 기입)

◆1-1. 회로관련 발명

발명회로도: 주변 블럭들까지 삽입하여 발명을 블럭도로 작성

상세회로도: 블럭도종에 신규 블럭의(발명의 Key point) 상세회로도 작성

파형도 or Flow chart: 가능하면 파형도 삽입, 마이콤 관련사항은 반드시 F/C 작성

◆1-2. 기구관련 발명

발명 도면: 전체적인 발명의 구성을 사시도로 작성

상세 도면: 발명의 구체적인 부분을 분해 사시도 및 단면도 등을 이용하여 작성

동작상태도: 발명내용중 동작부가 있을 경우 각 동작별로 구성의 상태도 작성

◆2. 발명의 목적: 발명을 이루고자 하는 목적 기술

기입예: 본 발명은 ~~을 ~~하게 하여 ~~하기 위한 것을 특징으로 한다.

◆3. 발명의 구성: 발명의 구성요소들을 나열함.

◆4. 발명의 동작(작용): 상기 구성들의 상관동작관계를 상세히 기술.

◆5. 발명의 효과: 종래기술에서 해결할 수 없었던 기술적 장점

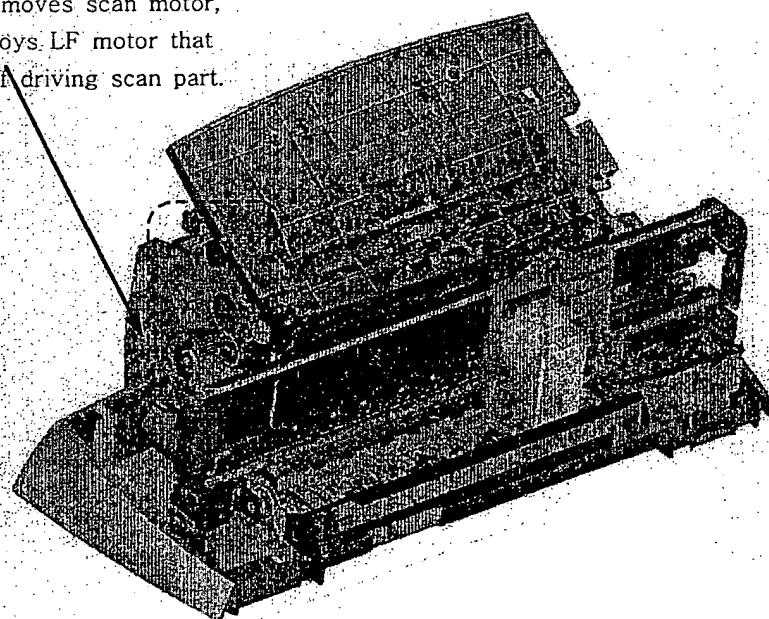
(새로운 성능, 경제성)을 구체적인 실제품 적용시 효과

(Data, 도표등 활용)을 예시하여 종합적으로 설명함

◆6. 한 Page가 넓어갈 경우 Page를 삽입하여 작성.

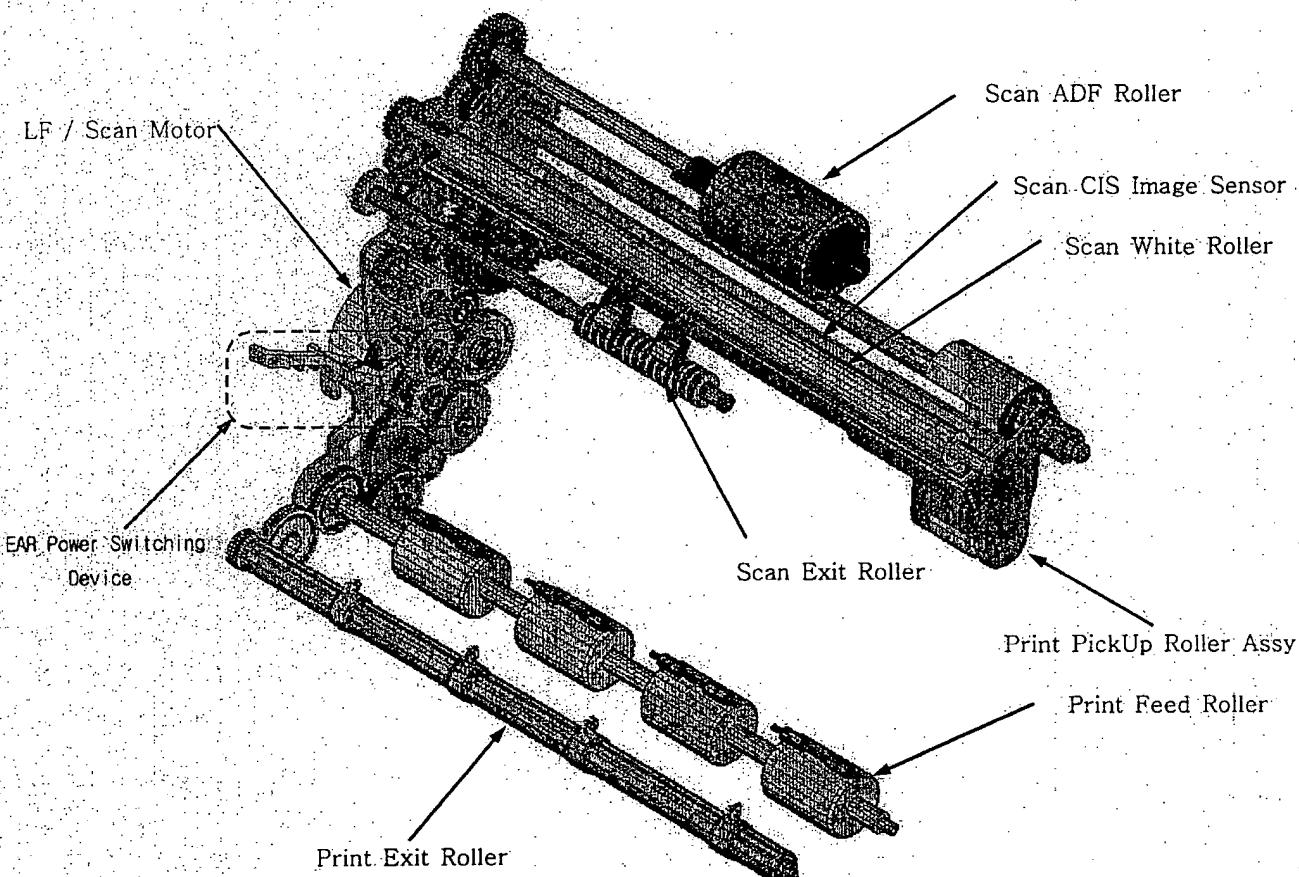
① Drawing of
the present
invention

This structure removes scan motor,
and instead employs LF motor that
is also capable of driving scan part.



Refer to detailed
drawings as
attached

< Detailed drawing 1 >

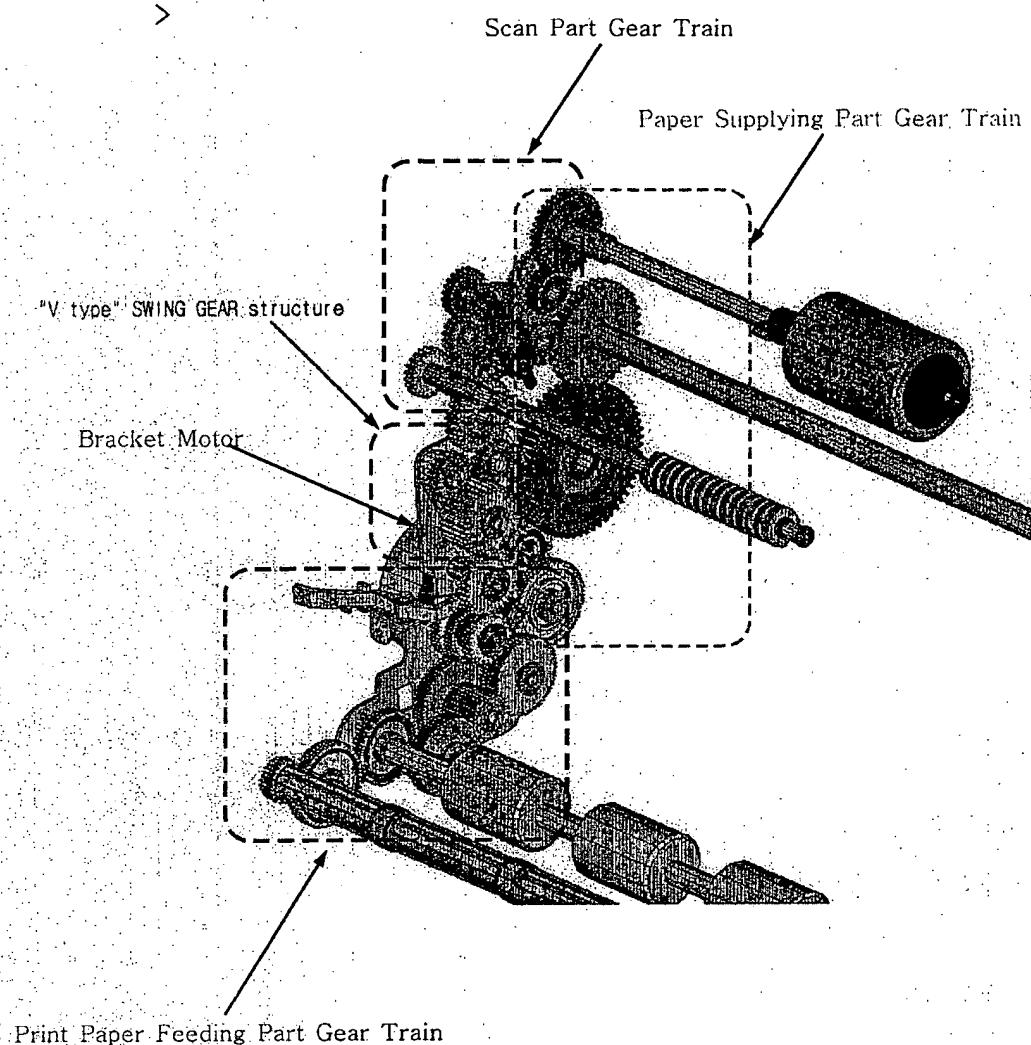




SAMSUNG

삼성전자

< Detailed drawing 2 >

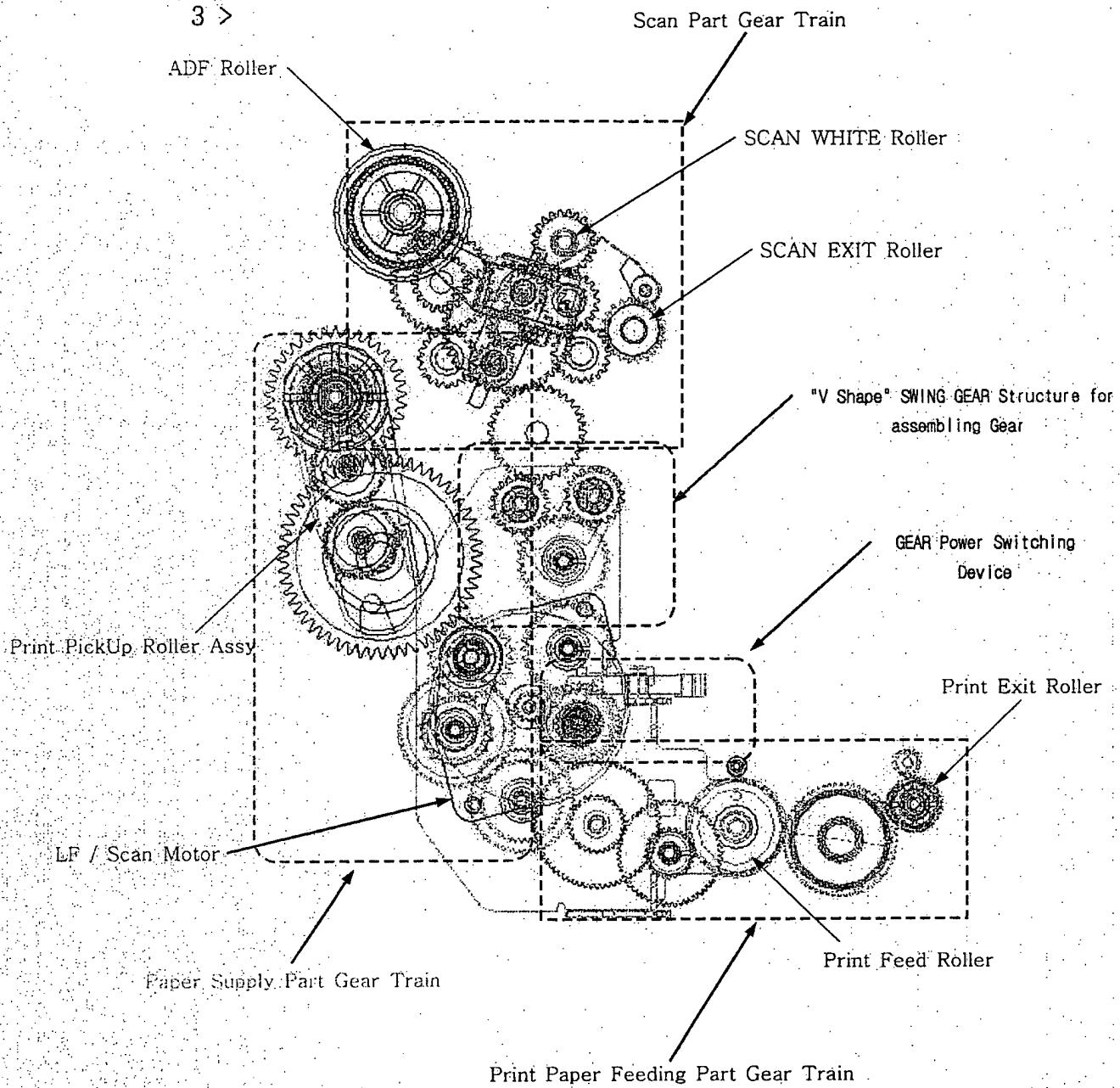




삼성전자

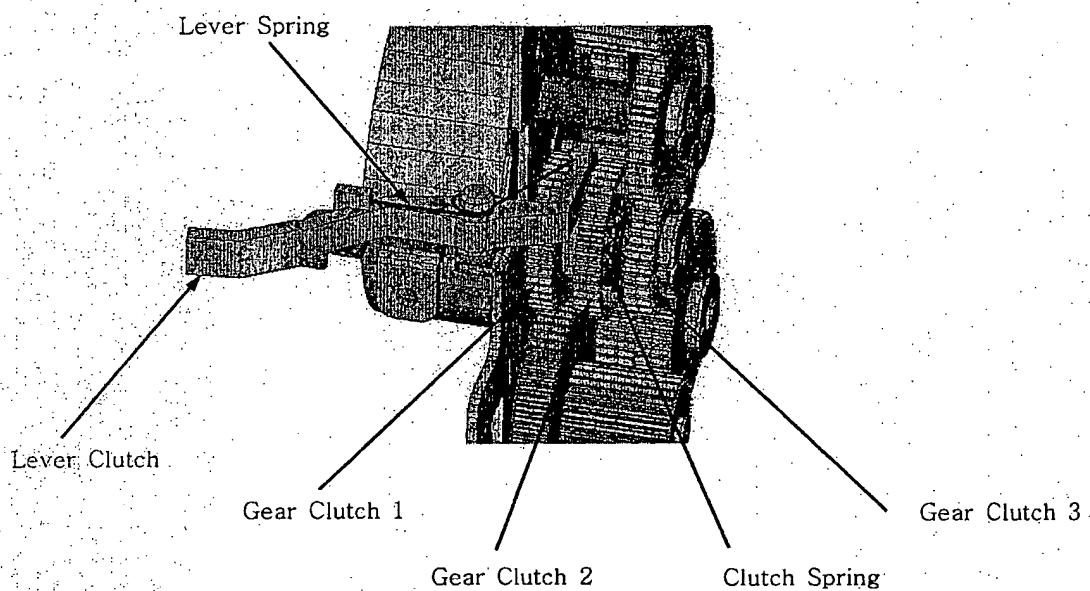
< Detailed Drawing

3 >

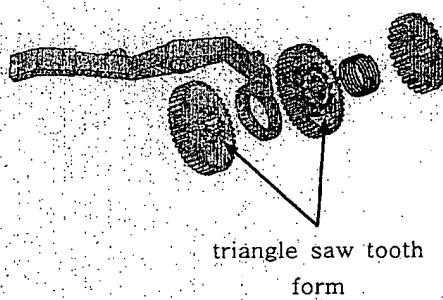


< Detailed Drawing

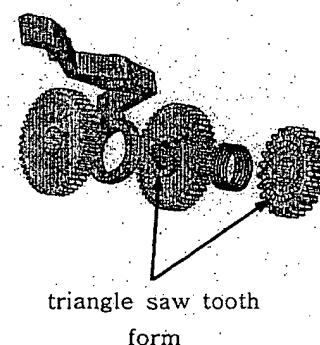
4 >



< Detailed Drawing 5 (Exploded view of
Gear Power Switching Device) >



< ISO View 1 >



< ISO View 2 >

② Object of the Invention

The present invention provides a multi-functional printer that can feed a document to be scanned and a paper to be printed by only one motor using a gear power switching device and a CR assembly, instead of step motors used for scanning and printing. Therefore, the manufacturing cost of the multi-functional printer can be reduced and the structure thereof can be compact.

③ Configuration of the Invention

The present invention comprises a CR Assembly, a Gear Power Switching Device, a LF Gear Train, a Paper Supply Part Gear Train, a Print Paper Feeding Part Gear Train, a Scan Part Gear Train, and a Bracket Motor.

The Gear Power Switching Device comprises a Lever Clutch, a Clutch Gear 1, a Clutch Gear 2, a Clutch Gear 3, a Clutch Spring, and a Lever Clutch Spring, and is engaged in a Bracket Motor.

Refer to detailed drawings as attached

④ Operation (Working) of the Invention

The operation of the invention is as follows:

1. When printing, a CR assembly is reciprocally moved within printing operation zone, and therefore, a lever clutch is not pressed. (this is always a default status in a setting/initial status is the same).

The clutch gear 1 is meshed with the clutch gear 2 by a triangle saw tooth form, and thus, a power can be transmitted through these clutch gears.

The clutch gear 1 has a triangle saw tooth form at its outer circumferential surface to transmit a power to the feeding roller and the pick-up roller of the printer.

The clutch gear 2 is not meshed with the clutch gear 3 by a triangle saw tooth form, and thus, a power can not be transmitted through these clutch gears.

**Motor is always meshed with the clutch gear 2.

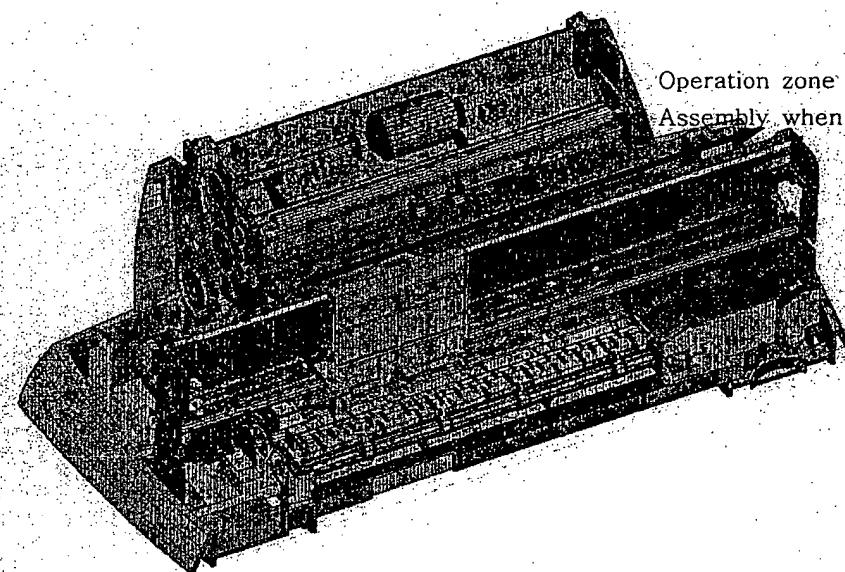
2. When scanning, the CR assembly is located at the end of left of the set, and the lever clutch is pressed by the CR assembly. Other end of lever, which opposes to the pressed end, moves the gear clutch 2 to the gear clutch 3 so that the clutch gear 1 is apart from the clutch gear 2 by the triangle saw tooth form, and the clutch gear 2 is meshed with the clutch gear 3 by the triangle saw tooth form. Therefore, motor power is transmitted to the scan gear train.

Refer to detailed drawings as attached

⑤ Effect of the Invention

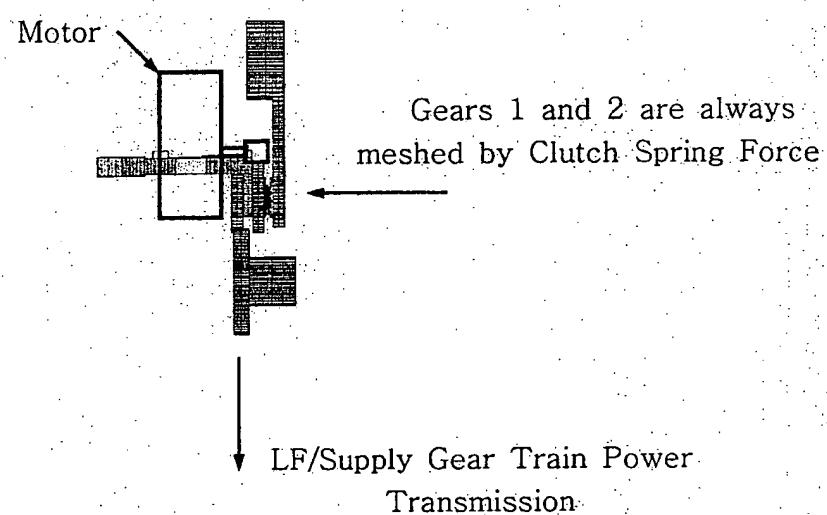
According to the present invention, the multi-functional printer does not require each scan motor and print LF motor but needs only one motor to feed a document to be scanned and a paper to be printed using the gear power switching device and the CR assembly. Therefore, this structure can be effectively applied to a low-priced multi-functional printer.

< Operation view at the
time of printing >



Operation zone of CR
Assembly when Printing

< 도1 >

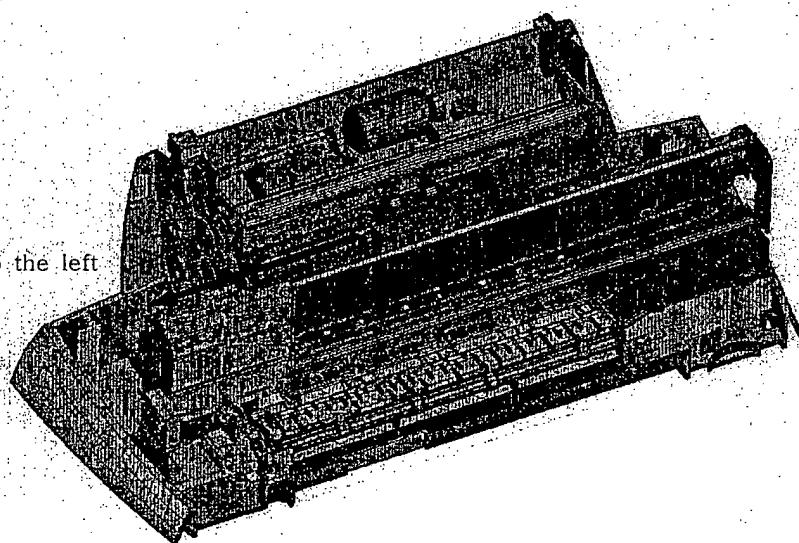


< FIG. 2 / Clutch Gear
Location view >

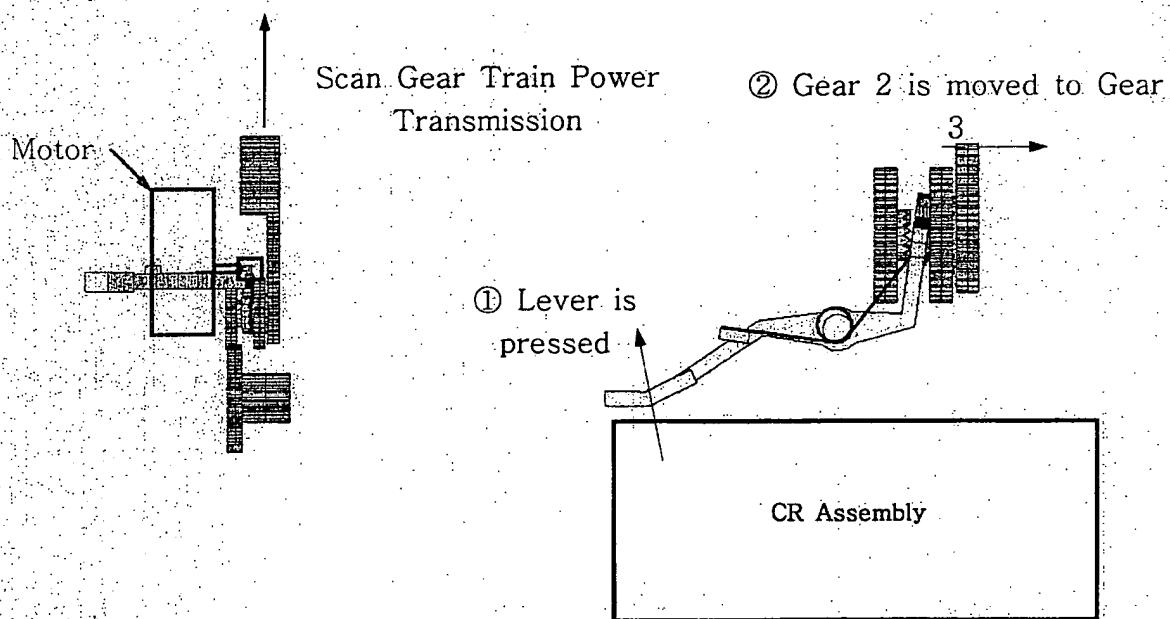
< Operation view at the time of Scanning >



CR Assembly moves to the left end



< FIG. 1 >



< FIG. 2 / Clutch Gear Location view >

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